

Flow as an Experiential Mechanism in Blended Learning and Structured Pedagogical Development

Chiraphol N. Chiyachantana

Professor, Department of Business Administration, Singapore Management University, Singapore

Pattarawan Prasarnphanich

Sasin School of Management, Chulalongkorn University, Thailand

Titus Quek

Singapore Management University, Singapore

Abstract:

Blended and technology-enhanced learning environments increasingly require pedagogical structures that cultivate higher-order thinking through meaningful learner experiences. Capture-the-Flag (CTF) activities represent a form of structured, problem-based pedagogy within blended learning contexts, yet empirical evidence explaining how their design features support higher-order cognitive development remains limited. This study conceptualizes CTFs as structured, technology-enhanced learning environments and examines how key pedagogical design features shape learners' experiential engagement and higher-order thinking through Flow as an underlying experiential mechanism. The findings indicate that pedagogical design features significantly influence Flow experiences, with playability emerging as the strongest predictor. The study highlights Flow as a central experiential mechanism through which structured pedagogical design in blended learning environments enhances higher-order thinking. By clarifying how design features shape learner experience and cognitive outcomes, the findings contribute to the development of theory-driven, experience-centered approaches to structured pedagogical innovation.

Keywords:

Capture-the-Flag, Flow theory, higher-order thinking skills, Problem-based learning, technology-enhanced learning.